



## Senate

General Assembly

**File No. 592**

February Session, 2008

Substitute Senate Bill No. 317

*Senate, April 14, 2008*

The Committee on Appropriations reported through SEN. HARP of the 10th Dist., Chairperson of the Committee on the part of the Senate, that the substitute bill ought to pass.

***AN ACT CONCERNING FUNDING FOR AN EMINENT FACULTY  
RESEARCH TEAM AND NANOTECHNOLOGY.***

Be it enacted by the Senate and House of Representatives in General Assembly convened:

1 Section 1. Subsection (c) of section 4-124hh of the general statutes is  
2 repealed and the following is substituted in lieu thereof (*Effective July*  
3 *1, 2008*):

4 (c) The Office of Workforce Competitiveness shall, within available  
5 appropriations, establish a grant program to provide funding for the  
6 promotion of collaborative research applications between industry and  
7 institutions of higher education. Grants pursuant to this subsection  
8 shall be awarded to institutions of higher education, technology-  
9 focused organizations and business entities and may be used:

10 (1) To improve technology infrastructure by advancing the  
11 development of shared use between institutions of higher education  
12 and business entities of laboratories and equipment, including, but not  
13 limited to, technology purchase, lease and installation, operating and

14 necessary support personnel and maintenance;

15 (2) As matching grants for joint projects between an industry, a  
16 technology-focused organization or a university. The office shall  
17 structure the matching grants to provide two rounds of funding  
18 annually and shall do outreach to companies. The matching grant part  
19 of the program shall include, but not be limited to, (A) one-to-one  
20 matching grants not to exceed one hundred thousand dollars, with in-  
21 kind match allowed for small and mid-sized companies, (B)  
22 involvement of a competitive process with outside reviewers using as  
23 key criteria (i) the demonstration of commercial relevance, and (ii) a  
24 clear path to the marketplace for any innovations developed in the  
25 course of the research, and (C) an aggressive marketing campaign  
26 through business organizations to raise industry awareness of  
27 resources from universities or technology-focused organizations; and

28 (3) To develop a Connecticut Center for Nanoscale Sciences and  
29 Development to provide a shared-use laboratory in one or more sites  
30 in the state to advance university research, industry application  
31 development and education involving the synthesis, characterization  
32 and fabrication of nanoscale materials, intermediates and devices and  
33 related program activities. The Connecticut Center for Nanoscale  
34 Sciences and Development shall provide: (A) Access to advanced  
35 atomic scale characterization and imaging instrumentation; (B)  
36 availability of pilot scale prototyping for nanotechnology components  
37 and devices; (C) expert technical operations support, including  
38 eminent faculty advancing the application of advanced  
39 instrumentation; (D) proactive outreach programs providing a single  
40 point of contact and providing technical assistance to the broad base of  
41 institutions of higher education and industries to make use of the  
42 advanced facilities; (E) significant levels of coinvestment from the  
43 participating institutions within the state; and (F) availability of  
44 shared-use provisions with industry and other education and research  
45 institutions. The Office of Workforce Competitiveness shall conduct a  
46 feasibility study and business planning model leading to the  
47 establishment of such center, including strategies for securing

48 investments from the federal government and private entities. On or  
49 before January 1, 2007, said office shall submit the results of such  
50 study, in accordance with the provisions of section 11-4a, to the joint  
51 standing committees of the General Assembly having cognizance of  
52 matters relating to commerce and higher education and employment  
53 advancement.

54     Sec. 2. (*Effective July 1, 2008*) (a) For the purposes described in  
55 subsection (b) of this section, the State Bond Commission shall have  
56 the power, from time to time, to authorize the issuance of bonds of the  
57 state in one or more series and in principal amounts not exceeding in  
58 the aggregate sixteen million dollars.

59     (b) The proceeds of the sale of said bonds, to the extent of the  
60 amount stated in subsection (a) of this section, shall be used by the  
61 Department of Economic and Community Development, in  
62 consultation with the Office of Workforce Competitiveness, for the  
63 purpose of providing grants-in-aid to The University of Connecticut  
64 and Yale University for the development of centers of nanoscale  
65 sciences pursuant to section 4-124hh of the general statutes, as  
66 amended by this act.

67     (c) All provisions of section 3-20 of the general statutes, or the  
68 exercise of any right or power granted thereby, which are not  
69 inconsistent with the provisions of this section are hereby adopted and  
70 shall apply to all bonds authorized by the State Bond Commission  
71 pursuant to this section, and temporary notes in anticipation of the  
72 money to be derived from the sale of any such bonds so authorized  
73 may be issued in accordance with said section 3-20 and from time to  
74 time renewed. Such bonds shall mature at such time or times not  
75 exceeding twenty years from their respective dates as may be provided  
76 in or pursuant to the resolution or resolutions of the State Bond  
77 Commission authorizing such bonds. None of said bonds shall be  
78 authorized except upon a finding by the State Bond Commission that  
79 there has been filed with it a request for such authorization which is  
80 signed by or on behalf of the Secretary of the Office of Policy and

81 Management and states such terms and conditions as said commission,  
 82 in its discretion, may require. Said bonds issued pursuant to this  
 83 section shall be general obligations of the state and the full faith and  
 84 credit of the state of Connecticut are pledged for the payment of the  
 85 principal of and interest on said bonds as the same become due, and  
 86 accordingly and as part of the contract of the state with the holders of  
 87 said bonds, appropriation of all amounts necessary for punctual  
 88 payment of such principal and interest is hereby made, and the State  
 89 Treasurer shall pay such principal and interest as the same become  
 90 due.

91 Sec. 3. (*Effective July 1, 2008*) Within available appropriations, The  
 92 University of Connecticut shall implement the recommendations of the  
 93 Office of Workforce Competitiveness' draft report entitled, "Investing  
 94 in Institutionally-Based, Shared-Use Nanotechnology Facilities for  
 95 Research, Education and Product Development," and shall recruit an  
 96 eminent faculty research team in nanotechnology pursuant to section  
 97 10a-104c of the 2008 supplement to the general statutes.

This act shall take effect as follows and shall amend the following sections:		
Section 1	<i>July 1, 2008</i>	4-124hh(c)
Sec. 2	<i>July 1, 2008</i>	New section
Sec. 3	<i>July 1, 2008</i>	New section

**HED***Joint Favorable C/R*

APP

**APP***Joint Favorable Subst.*

The following fiscal impact statement and bill analysis are prepared for the benefit of members of the General Assembly, solely for the purpose of information, summarization, and explanation, and do not represent the intent of the General Assembly or either chamber thereof for any purpose:

### **OFA Fiscal Note**

#### **State Impact:**

Agency Affected	Fund-Effect	FY 09 \$	FY 10 \$
Treasurer, Debt Serv.	GF - Cost	See Below	See Below
UConn	GF - Cost	2.0 million	2.0 million

Note: GF=General Fund

**Municipal Impact:** None

#### **Explanation**

**Section 2** of the bill authorizes \$16 million in General Obligation (GO) bonds for use by the Department of Economic and Community Development (DECD) to provide grants-in-aid to the University of Connecticut and Yale University. Such grants must be used for the development of centers of nanoscale sciences as described in section 1 of the bill. The total General Fund debt service cost for principal and interest payments on this amount over 20 years assuming a 5.0% interest rate, is \$24.4 million. The first year that the state will experience costs associated with the bonds depends on when they are allocated through the State Bond Commission and when the funds are expended.

sSB 27, the bond bill, as favorably reported by the Finance Committee, contains \$5.0 million for DECD to provide grants in aid to public and independent colleges and universities to purchase equipment for the establishment of Centers for Nanoscience.

**Section 3** of the bill requires the University of Connecticut (UConn) to (1) implement the recommendations of the Office of Workforce Competitiveness' (OWC) draft report, and (2) recruit, within available

appropriations, an eminent faculty research team in nanotechnology<sup>1</sup>.

sHB 5021, the budget bill, as favorably reported by the Appropriations Committee does not contain any funding for the recruitment of a new nanotechnology team. The cost of recruiting an eminent faculty team in nanotechnology is estimated to cost UConn approximately \$2.0 million. In order to implement the provisions of the underlying bill, UConn would have to reallocate resources from other purposes dedicated to non-mandated programs.

### ***The Out Years***

The annualized ongoing fiscal impact identified above would continue into the future subject to inflation. In addition, the ongoing fiscal impact for the \$16.0 million in GO bonds is the General Fund debt service payments over 20 years.

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<sup>1</sup> By law, UConn must raise a \$2.0 million match from the industry and other sources before it can spend any state dollars for its eminent faculty research team.

**OLR Bill Analysis****sSB 317*****AN ACT CONCERNING FUNDING FOR AN EMINENT FACULTY RESEARCH TEAM AND NANOTECHNOLOGY.*****SUMMARY:**

This bill authorizes up to \$16 million in state general obligation bonds and requires the Department of Economic and Community Development, in consultation with the Office of Workforce Competitiveness (OWC), to use the bond proceeds to provide grants-in-aid to UConn and Yale University for the development of nanoscale sciences centers. The bonds are subject to standard statutory bond issuance procedures and repayment requirements. This grant is in addition to other grants OWC may award (see below).

The bill requires UConn to (1) implement the recommendations of OWC's draft report, "Investing in Institutionally-Based, Shared-Use Nanotechnology Facilities for Research, Education, and Product Development" and (2) recruit an eminent faculty research team in nanotechnology. UConn must do this within available appropriations. By law, UConn must raise at least \$2 million from industry and other sources before it can spend any state dollars for its eminent faculty recruitment program.

By law, OWC may award grants to colleges and universities, businesses, and technology-focused organizations to develop a Connecticut Center for Nanoscale Sciences and Development. The center must provide (1) at least one shared-use laboratory in the state to advance academic research, industry application development, and education involving the synthesis, characterization, and fabrication of nanoscale material, intermediates, and devices and (2) related activities. The bill requires that the center also provide:

1. access to advanced atomic scale characterization and imaging instrumentation;
2. pilot scale prototyping for nanotechnology components and devices;
3. expert technical operations support, including eminent faculty;
4. proactive outreach programs as a single point of contact and technical assistance to the colleges, universities, and industries using the advanced facilities;
5. significant levels of coinvestment from participating institutions; and
6. shared-use provisions with industry and other education and research institutions.

EFFECTIVE DATE: July 1, 2008

## **BACKGROUND**

### ***Nanotechnology***

Nanotechnology is cross-disciplinary science that combines chemistry and engineering to manipulate individual atoms and molecules to produce a desired structure. It can be applied to organic and inorganic matter. Nanotechnology is potentially applicable to material, manufacturing processes, alternate energy production, electronics, and health care products and processes.

### ***UConn Eminent Faculty Recruitment Program***

UConn must recruit faculty to accelerate applied research and development in a way that supports the state's economic development and promotes core competence areas. It must do this by supplementing faculty compensation and related costs. Eligible scientists must have demonstrated excellence in their research fields, want to work collaboratively with other UConn scientists, and be interested in commercializing their research.



**COMMITTEE ACTION**

Higher Education and Employment Advancement Committee

Joint Favorable Change of Reference

Yea 15 Nay 0 (03/04/2008)

Appropriations Committee

Joint Favorable Substitute

Yea 54 Nay 0 (03/28/2008)